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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,468	03/27/2006	James Sammons	U 015791-2	5066
140 7590 07/10/2008 LADAS & PARRY LLP 26 WEST 61ST STREET NEW YORK, NY 10023				
EXAMINER KLEIN, GABRIEL J				
ART UNIT 3641		PAPER NUMBER		
NOTIFICATION DATE 07/10/2008		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

nymail@ladas.com

### Office Action Summary

**Application No.**

10/536,468

**Applicant(s)**

SAMMONS ET AL.

**Examiner**

GABRIEL J. KLEIN

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 March 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 73-76 and 78-85 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 73-76, 78-85 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 73-74, 76, 78, 80, 82-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann (5415101) or Dumas (2605704) .

In reference to claim 73, Dadley discloses a flexible linear charge element adapted to the penetration of a structure, said linear charge element forming an elongate composite structure; said composite structure including:

- a shaped explosive charge component (figure 3, element 1);
- a cutting sheet liner component (figure 3, element 5);
- a stand-off member component (figure 3, element 17), and wherein each said component is at least partially enveloped in a casing (figure 3, element 1).

Thus, Dadley et al discloses the claimed invention except does not expressly state that the casing (element 11) is an inertial mass tamping carapace. Dadley also fails to disclose a tubular stand-off member.

However, Backofen, Jr. et al teaches that it is known to provide an inertial mass tamping carapace (figure 3, element 40'; and column 6, lines 16-22) to contain the

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detonation products and energy of a linear charge element so as to substantially reduce or almost completely eliminate side and end losses thereby enabling the detonation energy to be efficiently concentrated on the surface to be penetrated. Further, it should be appreciated that Backofen, Jr. et al teaches that said inertial mass tamping carapace has edge surfaces (figure 3, element 56) that can be used for mounting to a surface using adhesives, mechanical straps, or the like. Further, Backofen, Jr. et al teaches that said inertial mass tamping carapace is formed of a dense non-toxic, flexible plasticized metal composite (Backofen, Jr et al: column 5, lines 66-68, to column 6, lines 1-15). It would have been obvious to one having ordinary skill in the art to substitute the outer casing (figure 3, element 16) as taught by Dadley et al with the inertial mass tamping carapace as taught by Backofen Jr. et al to more efficiently contain the detonation products and energy of the linear charge element so as to substantially reduce or almost completely eliminate side and end losses thereby enabling the detonation energy to be more efficiently concentrated on the surface to be penetrated. Further, a person of ordinary skill in the art would be able to make such a substitution using known methods in a manner that would yield predictable results. This is supported by the fact that Backofen Jr. et al plainly states that the inertial mass tamping carapace can be applied to linear shaped charges (column 6, lines 16-22), and by the fact that Dadley et al teaches a linear shaped charge.

Further, both Brinkmann and Dumas teach that it is known to provide a linear shaped charge element with a stand-off member that is tubular in order to provide the linear shaped charge element with a means for underwater use (Brinkmann, column 3,

lines 50-54; Dumas, column 4, lines 3-14). Thus, it would have been obvious to a person of ordinary skill in the art to modify the stand-off member of the linear shaped charge element, as taught by Dadley et al in view of Backofen Jr. et al, to be tubular, as taught by both Brinkmann and Dumas in order to provide the linear shaped charge element with a means for underwater use. It should be appreciated that such a modification would only require routine skill in the art, and that such a modification would yield predictable results to a person having ordinary skill in the art.

In reference to claim 74, Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas teaches that said cutting sheet liner component is disposed between said shaped explosive charge component and said stand-off member component.

In reference to claim 76, Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas teaches that said explosive charge component is a shaped charge component; a shape of said shaped charge component adapted to produce a "Monroe Effect" when detonated.

In reference to claim 78, Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas teaches that said inertial mass tamping carapace is formed of a dense inert compound (column 3, lines 31-65; and column 5, lines 66-68, to column 6, lines 1-15).

In reference to claim 80, Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas teaches that said stand-off member component is adapted

to provide a separation between said cutting sheet liner and said structure (Dadley et al: figure 3).

In reference to claim 82, Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas teaches that said stand-off member component is in the form of an elongate flexible hollow tubular member (Dadley et al: column 3, lines 13).

In reference to claim 83, Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas teaches that said composite structure is provided with attachment means adapted to attach said linear charge element to a surface of said structure (Backofen, Jr. et al: column 4, lines 31-35).

In reference to claims 84-85, Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas teaches the claimed invention except for wherein said attachment means comprises at least one adhesive or magnetic strip. The examiner asserts that it is well within the knowledge of a person having ordinary skill in the art to use at least one adhesive or magnetic strip to attach a linear charge element to a surface. Thus, it would have been obvious to one having ordinary skill in the art to provide the flexible linear charge element as taught by Dadley et al in view of Backofen, Jr. et al with at least one adhesive or magnetic strip in order to attach said linear charge element to a surface, and since Dadley et al in view of Backofen, Jr. et al teaches that said linear charge element is provided with attachment means adapted to attach said linear charge element to a surface (Backofen, Jr. et al: column 4, lines 31-35). Further, the examiner takes Official Notice that a person of ordinary skill in the art would be motivated to use either an adhesive or magnetic strip as said attachment means since

Dadley et al in view of Backofen, Jr. et al teaches that said attachment means can be an adhesive, a mechanical strap, or the like, and since an adhesive or magnetic strip is a known attachment device of this type.

Claim 75 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas and further in view of Nielson et al (6962634).

Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas discloses the claimed invention except for wherein said cutting sheet liner component comprises a matrix of polymers incorporating a dense distribution of metal carbide particles. Nielson et al teaches that it is known to use a cutting sheet liner component comprising a matrix of polymers incorporating a dense distribution of metal carbide particles (column 3, lines 25-40; column 7, lines 17-23) to provide a reactive liner for a shaped charge that has increased penetrative capabilities over conventional metal liners. It would have been obvious to one having ordinary skill in the art to substitute the liner taught by Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas with the reactive liner as taught by Nielson et al to provide the linear cutting charge with increased penetrative capabilities (for cutting through armor), and since it would merely constitute a substitution of equivalent structures in an analogous art setting. Further, a person of ordinary skill in the art could carry out such a substitution using known methods in a manner that would yield predictable results.

Claim 81 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas.

Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas teaches the claimed invention including wherein said stand-off member component is in the form of an elongate flexible foam structure (figure 3, element 17; and column 2, last paragraph which discloses that said groove filling portion can be constructed out of expanded polyethylene). Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas does not explicitly state that said expanded polyethylene (foam) is closed cell. However, it would have been an obvious matter of design choice to a person of ordinary skill in the art to make the stand-off member component as taught by Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas out of closed cell foam (expanded polyethylene), because Applicant has not disclosed that closed cell foam provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the expanded polyethylene stand-off member component as taught by Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas, because it prevents the influx of dense material into the groove of the linear cutting charge thereby ensuring optimum cutting efficiency, and since it appears to be an arbitrary design consideration which fails to patentably distinguish over Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas. Therefore, it would have been an obvious matter of design choice to modify Dadley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas to obtain the invention as specified in the claim(s).



Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dudley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas and further in view of Brown (3777663).

Dudley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas teaches the claimed invention except for wherein said inert compound comprises powdered barium sulphate. Brown teaches that it is known to incorporate powdered barium sulphate into a plastic shaped charge enclosure to increase the specific gravity of said plastic shaped charge enclosure (column 3, lines 40-49). It would have been obvious to one having ordinary skill in the art to modify the inertial mass tamping carapace as taught by Dudley et al in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas to include powdered barium sulphate since it is known to use powdered barium sulphate to increase the specific gravity of a shaped charge enclosure, and since said inertial tamping mass carapace is a shaped charge enclosure that relies upon a high specific gravity to contain the detonation products of a linear shape charge to minimize losses. Further, since Applicant does not disclose that the use of powdered barium sulphate provides an advantage, is used for a particular purpose (as opposed to other powdered metals), or solves a stated problem, it should be appreciated that Applicant's use of powdered barium sulphate appears to be a mere design consideration.

### ***Response to Arguments***

Applicant's arguments filed March 21, 2008 have been fully considered but they are not persuasive. Specifically, Applicant argues that Dudley et al does not disclose a

tamping carapace. However, it is noted that the non-final rejection clearly states that assuming arguendo that Dadley et al does not disclose a tamping carapace it should be appreciated that the combination of Dadley et al in view of Backofen, Jr. et al does indeed teach a tamping carapace. It should be appreciated that Applicant's arguments do not address the rejection of claims 73-74, 76-78, 80, and 82-85 as being unpatentable over Dadley et al in view of Backofen, Jr. et al. Thus, it should be appreciated that the rejection over Dadley et al has been removed from the instant action, and that the Office is now relying solely upon the rejection of claims 73-74, 76-78, 80, and 82-85 as being unpatentable over Dadley in view of Backofen, Jr. et al and further in view of Brinkmann or Dumas. It should be appreciated that the Brinkmann and Dumas references have been added to the rejection in order to address Applicant's newly added limitation that the stand-off member is tubular. Thus, Applicant's arguments concerning the Dadley et al reference by itself are moot. Further, Applicant's arguments concerning a tubular stand-off member are also moot in view of the new grounds of rejection.

In addition, Applicant argues that Nielsen teaches that the inclusion of metal carbide particles in the cutting sheet liner is used for a purpose that differs from that of Applicant. However, this is of no consequence since Applicant does not claim that the inclusion of metal carbide particles in the liner is used for any particular purpose.

Similarly, Applicant argues that Brown teaches that the inclusion of barium sulphate is for a purpose that is different than that of Applicant. However, this also is of

no consequence since Applicant does not claim that the inclusion of barium sulphate is used for a particular purpose.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gabriel J. Klein whose telephone number is 571-272-8229. The examiner can normally be reached on Monday through Friday 7:15 am to 3:45 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GJK

/James S. Bergin/  
Primary Examiner, Art Unit 3641